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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/482,717	01/12/2000	Norman C Chan	4366-5	7386
48500	7590	10/31/2005	EXAMINER	
SHERIDAN ROSS P.C. 1560 BROADWAY, SUITE 1200 DENVER, CO 80202			SINGH, RAMNANDAN P	
		ART UNIT	PAPER NUMBER	
		2646		

DATE MAILED: 10/31/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/482,717	CHAN ET AL.	
	Examiner	Art Unit	
	Ramnandan Singh	2646	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) Responsive to communication(s) filed on 09 May 2005.
- 2a) This action is FINAL. 2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) Claim(s) 1-10 and 35-44 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) Claim(s) 35-38 is/are allowed.
- 6) Claim(s) 1-10 and 39-44 is/are rejected.
- 7) Claim(s) _____ is/are objected to.
- 8) Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on _____ is/are: a) accepted or b) objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) All b) Some * c) None of:
 1. Certified copies of the priority documents have been received.
 2. Certified copies of the priority documents have been received in Application No. _____.
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) Notice of References Cited (PTO-892)
- 2) Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
 Paper No(s)/Mail Date _____.
- 4) Interview Summary (PTO-413)
 Paper No(s)/Mail Date. _____.
- 5) Notice of Informal Patent Application (PTO-152)
- 6) Other: _____.

DETAILED ACTION

1.

Status of Claims

Claims 11-34 are cancelled.

Claim 1 is amended.

New claims 35-44 are added.

Claims 1-10 and 35-44 are pending.

Claim Objections

2. Claim 42 is objected to because of the following informalities: Claim 42 recites "The method of **Claim 21**" in line 1. This is incorrect. For this Office action, the Examiner assume "The method of **Claim 41**". Appropriate correction is required.

Claim Rejections - 35 USC § 112

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4. Claims 39-42 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 39 recites the limitation " transmission medium rising to a level that is **unacceptable**" in line 12. This limitation is indefinite because the word "unacceptable" is subjective. A similar thing holds for claims 40-42.

Claim Rejections - 35 USC § 102

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

6. Claims 1-2, 7-9 are rejected under 35 U.S.C. 102(e) as being anticipated by Dunn et al [US 6,580,793 B1].

Regarding claim 1, Dunn et al teach a method and apparatus for echo cancellation within a switching center of a communication network shown in Figs. 1, 4 [col. 5, line 57 to col. 6, line 3; col. 9, line 52 to col. 10, line 13]. The method comprises the steps of:

providing a pool of echo cancellers within the switching center [Fig. 4; col. 5, lines 8-13; col. 3, lines 54-63; col. 8, lines 24-39; col. 11, lines 5-16];

coupling a "near end" 116 (i.e. local user) with a "far end" 112 (i.e. local user) [Fig. 1; col. 5, lines 48-56];

after the first local device is coupled to the external transmission medium, monitoring echo cancellation activity and echo energy during the communication connection; and activating/deactivating an echo canceller using an echo controller 142 [col. 4, lines 25-59] wherein the echo controller includes an echo detector 158, as shown in Fig. 2., to detect echo in a signal [Figs. 1, 2, 4; col. 7 line 27 to col. 9, line 40]. Further, Fig. 3 depicts a flow chart for assigning and discontinuing of an echo canceller [col. 10, line 14 to col. 12, line 59].

Regarding Claim 2, Dunn et al teach that the far-end and near-end communications devices, as shown in Figs. 1-2, 4, could be any devices that require circuit interconnection of the type shown , and may, for example, be the trunk interface circuits of first and second telephone switching systems [col. 5, lines 64-67].

Regarding Claim 7, Dunn et al teach detecting echo cancellation activity using echo detector 158 shown in Fig. 2 [col. 7, line 27 to col. 8, line 6], and allocating an echo canceller as shown in Fig. 3.

Regarding Claim 8, Dunn et al teach a pool of echo cancellers that includes a multi-channel hardware echo cancellation device [Fig. 4; col. 6, lines 33-41; col. 8, lines 24-44].

Regarding Claim 9, Dunn et al teach a pool of echo cancellers that includes a programmable digital signal processing (DSP) device [Fig. 4; col. 5, lines 8-13; col. 8, lines 24-44; col. 9, lines 41-51; col. 11, lines 5-16].

Claim Rejections - 35 USC § 103

7. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.
8. Claims 3-4 are rejected under 35 U.S.C. 103(a) as being unpatentable over Dunn et al as applied to Claim 2 above.

Regarding Claims 3, 4, Dunn et al teach that the far-end and near-end communications devices, as shown in Figs. 1-2, 4, **could be any devices** that require circuit interconnection of the type shown , and may, for example, be **the trunk interface** circuits of first and second telephone switching systems [col. 5, lines 64-67; col. 6, lines 25-33].

At the time of the invention, it would have been obvious to a person of ordinary skill in the art to connect a user device that includes a telephone unit providing a

communication path between the telephone unit and the trunk in order to avail the telecommunications system 110 [Dunn et al; col. 1, lines 7-11].

9. Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over Dunn et al as applied to claim 1, and further in view of Toshiyuki [JP-05268121].

Regarding Claim 5, Dunn et al do not teach detecting an echo by perceiving audibly. However, it is well known in the art .

Toshiyuki teaches applying an echo canceller when the talking quality is deteriorated. Under this situation, the subscriber operates a pushbutton to implement the adaptive operation of the echo canceller 22 [Abstract].

At the time of the invention, it would have been obvious to a person of ordinary skill in the art to apply the technique of Toshiyuki to Dunn et al to realize stable talking quality by reducing the deterioration in the speech quality by an echo canceller, and thereby improve the communication.

10. Claims 6 and 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Dunn et al as applied to claim 1 above, and further in view of Pruett et al [US H1,885], and further in view of the Admitted Prior Art (APA) [Applicant's specification, page 12, line 17 thru page 13, line 6].

Regarding claims 6 and 10, Dunn et al do no teach expressly allocating a call classifier and receiving an indication from the call classifier that echoes above a predetermined power level are being received from the first external transmission medium.

Pruett et al teach a method and apparatus for echo cancellation within a switching center of a communication network shown in Figs. 1, 3, 6 [col. 2, line 50 to col. 3, line 7]. Fig. 3 illustrates a echo canceller control system 300 to control a pool of echo canceller modules in a telecommunication switch system [col. 6, lines 9-55]. An echo canceller module controller is formed by **call processing system** 306, switching module 302, and bank controller 310 [col. 6, line 56 to col. 7, line 22]. Further, Fig. 4b illustrates an agent networking method [col. 8, lines 5-44]. Fig. 5 provides a flow chart for a method 500 for controlling an echo canceller module in a trunk. The method 500 can be used by a telecommunications system to control the operation of an echo canceller module so as to provide echo cancellation only when required, and to prevent the application of echo cancellation to a signal that does not contain any echo [col. 9, line 28 to col. 10, line 56; col. 12, lines 43-54]. Fig. 5 at steps 508 and 512 indicates that the echo canceller is turned on if the signaling data indicates echo. Further, Pruett et al teach a call processor 306 that includes an out-of-band signaling agent 316, an agent networking system 318, an in-band signaling agent 320, and signaling interface modules 314; wherein each signaling interface module 314 is

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operable to receive control and signaling data from an external source, such as the switching network [col. 6, lines 9-18; col. 6, line 37 to col. 7, line 22; col. 9, lines 6-18]; and allocating an echo canceller as needed [Fig. 5; col. 9, lines 29-60].

Although Pruett et al teach expressly allocating the call processor (or classifier) and determining whether a source of echo may be present in a telecommunication channel [col. 5, lines 9-32], they do not teach expressly receiving an indication from the call classifier that echoes above a predetermined power level are being received from the first external transmission medium. However, the method of determining an echo power level is well-known in the art.

The APA of the Applicant teaches determining the echo energy levels using a call classifier [Applicant's specification, page 12, line 17 thru page 13, line 6].

At the time of the invention, it would have been obvious to a person of ordinary skill in the art to combine the call classifier of Pruett et al with Dunn et al in order to provide integrated telecommunication services by transferring the data indicating the existence of an echo signal to an echo canceller from the call classifier [Pruett et al; col. 9, lines 12-18], and apply the method of the APA of Pruett et al to detect the echo energy above a predetermined value using the call classifier of Pruett et al in order to transfer this information to the echo canceller to cancel echoes [Pruett et al; col. 5, lines 15-25].

Response to Arguments

11. Applicant's arguments filed May 09, 2005 have been fully considered but they are not persuasive.

(i) Applicant's argument—“The Examiner mischaracterizes the clear teachings of Dunn et al. At col. 9, lines 17-27, Dunn et al states: “In operationrequiring service” on page 15.

Examiner's response— The Examiner respectfully disagrees. The Applicant is citing only one embodiment of the Dunn's invention, not the second embodiment. Dunn et al teach two embodiments 100 and 410. Fig. 3 of Dunn et al applies to both embodiments with some options [col. 10, line 14 to col. 11, line 4].

Further, Dunn et al state, “In step 332, comparator 162 compares the ΔE measure with a threshold. If the energy in the echo signal exceeds the threshold, then the method continues in step 334. The comparator selects the echo-cancelled received signal x to be the output signal y. The echo canceller remains active. In multi-channel echo canceller embodiments where an echo canceller may be allocated to a channel, that allocation is maintained. The method then continues at step 340. If, in the energy in the echo signal did not exceed the threshold, then the method continues in step 336. The comparator 162 selects the unteated received signal r to be the output signal y. The echo canceller is deactivated. In step 338, which is optional, the echo canceller is released for reallocation to another channel. The method continues at step 340” [Fig. 3; col. 10, lines 48-62].

The Examiner asserts that the **decisions** for “maintaining the activation of an echo canceller” and for “deactivating the echo canceller” in the Dunn’s system requires continuous monitoring of the echo in the channel in order to enable allocation and de-allocation of an echo canceller as it is needed. As such, the continuous monitoring subsystem is inherently present in the Dunn’s system. For example, Irvin [US 4,628,156] states, “Generally, such echo cancellers are operative in an adaptive mode and they monitor the state and echo conditions more or less continuously [col. 1, lines 18-21; Figs. 1-4; col. 5, lines 3-59].

Allowable Subject Matter

12. Claims 35-38 are allowable.
13. Claims 39-44 would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, 2nd paragraph, set forth in this Office action.

Examiner's Statement of Reasons for Allowance:

Claim 39 identifies the uniquely distinct feature of a switching center for performing echo cancellation within a switching center of a communication network, the switching center comprising: a pool of echo cancellation units; a call classifier operable to detect an echo energy level from a first external transmission medium associated with a first communication connection; and an allocation unit for allocating an echo cancellation unit from the pool of echo cancellation units to the first communication connection being supported by the switching center in response to detection, by the call

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classifier, of the echo energy above a threshold level. As such claim 35 requires call classifiers to detect an echo energy level from a first external transmission medium associated with a first communication connection to allocate an echo canceller. While the closest prior art, Dunn et al [US 6,580,793 B1], Litzenberger et al [US 6,728,2223 B1], and Hamilton et al [US 5,764,759], each teach allocating echo cancellers, Dunn et al using echo cancellation activity and echo energy, Litzenberger et al using a pool switch matrix, and Hamilton et al using call processing resources, none of them teach or suggest requiring call classifiers to detect an echo energy level for allocating an echo canceller. As such the prior art , either singularly or in combination, fail to anticipate or render the above underlined limitation obvious. Therefore, claim 35 is allowable.

Claim 39 is essentially similar to claim 35 and would be allowable for the reasons stated above if rewritten to overcome the rejection(s) under 35 U.S.C. 112, 2nd paragraph, set forth in this Office action.

Claims 36-38 being dependent from claim 35 are allowable.

Claims 40-42 being dependent from claim 39 would be also allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, 2nd paragraph, set forth in this Office action.

Claims 43 and 44 would be allowable due to dependence from claim 39.

Conclusion

14. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

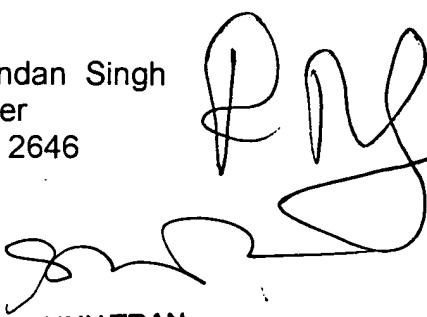
A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

15. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ramnandan Singh whose telephone number is (571) 272-7529. The examiner can normally be reached on M-TH (8:00-5:30).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Sinh Tran can be reached on (571) 272-7564. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Ramnandan Singh
Examiner
Art Unit 2646


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SUPERVISORY PATENT EXAMINER